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DUGAN & DUGAN, PC 55 SOUTH BROADWAY TARRYTOWN, NY 10591			GREENHUT, CHARLES N	
			ART UNIT	PAPER NUMBER
			3652	
DATE MAILED: 10/20/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/650,312

Applicant(s)

ELLIOTT ET AL.

Examiner

Charles N. Greenhut

Art Unit

3652

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-66 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-16, 18-47 and 49-66 is/are rejected.
- 7) ☒ Claim(s) 17 and 48 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 August 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 4/13/04, 4/14/04, 7/19/05(2), 9/15/04
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

**I. Information Disclosure Statement**

1. The following references have been lined through on the IDS:
  - 1.1. "2002/090282" on the 7/19/05 IDS, because it should read "2002/0090282".
  - 1.2. "2003/010449" on the 7/19/05 IDS, because should read "2003/0010449".
  - 1.3. "2002/0090282" on the IDS dated 4/14/04 because the reference is listed in the wrong section.

**II. Drawings**

1. The drawings are objected to because in figure 13A as compared to 12A it appears that the rear clamping member (1204) has moved rearwardly independent of the front clamping member. It can be seen from figures 5A and 7A of U.S. provisional patent application 60/407,340, the disclosure of which is incorporated in this application, that the clamping members travel in unison. Furthermore, figure 12A and 13A are additionally objected to because the forward notch is not shown and this feature must be shown to accurately depict the claimed invention.
2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "load lock" in claims 34, and 56 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.
3. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the

appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### **III. Specification**

1. "U.S. Patent Application Serial No. 60/407,463" on page 2 line 20, page 25 lines 4-5, and page 26 lines 16-17 should read, "U.S. Provisional Patent Application Serial No. 60/407,463"
2. "U.S. Patent Application Serial No. 60/443,004" on page 2 line 25 should read, "U.S. Provisional Patent Application Serial No. 60/443,004"
3. The incorporation of essential material in the specification by reference to an unpublished U.S. application, foreign application or patent, or to a publication is improper. Applicant is required to amend the disclosure to include the material incorporated by reference, if the material is relied upon to overcome any objection, rejection, or other requirement imposed by the Office. The amendment must be accompanied by a statement executed by the applicant, or a practitioner representing the applicant, stating that the material being inserted is the

Art Unit: 3652

material previously incorporated by reference and that the amendment contains no new matter. 37 CFR 1.57(f).

3.1. Unpublished U.S. Provisional Application 60/407,340 contains essential material that may not be incorporated by reference. Figures 6B, 6C, 7C, and 7D and the accompanying description of the operation of the clamping mechanism on pages 19-21 of provisional application 60/407,340 are necessary for a proper understanding of the invention.

#### **IV. Claim Objections**

1. With respect to claim 58, "a port" in line 3 should read "the port".
2. With respect to claim 65, "with a cam respective cam followers" in lines 2-3 should read, "with a cam, respective cam followers".

#### **V. Claim Rejections - 35 USC § 102**

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

1. Claim(s) 1-4, 13, 18, and 19 is/are rejected under 35 U.S.C. 102(e) as being anticipated by DOCHE (US 6,431,806).

- 1.1. With respect to claim 1, DOCHE '806 discloses a substrate transfer location (2), having a support (22), and an actuator (23), to interact with an opening mechanism (111) so as to employ movement of the substrate carrier to actuate opening (to couple (111) & (211)).
- 1.2. With respect to claim 2, DOCHE '806 additionally discloses a docking platform (22), and employing a docking movement to actuate opening.
- 1.3. With respect to claim 3, DOCHE '806 additionally discloses a port (Fig. 3C).
- 1.4. With respect to claim 4, DOCHE '806 additionally discloses a storage shelf (29).
- 1.5. With respect to claim 13, DOCHE '806 additionally discloses the actuator adapted to unlatch an openable portion of the carrier.
- 1.6. With respect to claim 18, DOCHE '806 additionally discloses movement toward a processing tool (Col. 4 Li. 13-14)
- 1.7. With respect to claim 19, DOCHE '806 additionally discloses a port.
2. Claim(s) 1, 7-8, 10-11, 14-15, 20-23, 26-32, 39, 41, 42, 44-46, and 49-50 is/are rejected under 35 U.S.C. 102(b) as being anticipated by OHTA (US 6,068,439).
  - 2.1. With respect to claims 1, OHTA discloses a substrate transfer location having a support, an actuator mechanism (41) to interact with an opening mechanism (14) so as to employ movement of the carrier to actuate the opening (Fig. 3A-D).
  - 2.2. With respect to claim 7, OHTA additionally discloses a second movement to actuate closing (as a result of the spring bias (18)).
  - 2.3. With respect to claim 8, OHTA additionally discloses a cam follower arrangement (37).

- 2.4. With respect to claim 10, OHTA additionally discloses the opening mechanism pivoting a door (13).
- 2.5. With respect to claim 11, OHTA additionally discloses the actuator interfacing with the opening mechanism to pivot the door downwardly (upon retraction from actuator).
- 2.6. With respect to claims 14/13/1 and 15, OHTA additionally discloses the actuator mechanism adapted to unclamp the substrate (Col. 5 Li. 42 et seq.).
- 2.7. With respect to claim 20, OHTA discloses a housing having an openable portion and opening mechanism to interface with an actuator so as to employ movement of the carrier to actuate opening and closing of the carrier.
- 2.8. With respect to claim 21, OHTA additionally discloses a cam follower arrangement.
- 2.9. With respect to claim 22, OHTA additionally discloses a port (12a).
- 2.10. With respect to claim 23, OHTA additionally discloses a pivotably mounted door.
- 2.11. With respect to claim 26, OHTA additionally discloses a latching mechanism (16), and movement of the carrier employed to latch and unlatch the mechanism.
- 2.12. With respect to claim 27 and 28, OTHA additionally discloses a clamping mechanism (13) and a clamping actuator (14) employing movement of the substrate carrier to clamp and unclamp a substrate.
- 2.13. With respect to claim 29, OTHA additionally discloses the housing adapted to house only a single substrate.
- 2.14. With respect to claim 30, OTHA additionally discloses the openable portion hingedly secured to the housing.

- 2.15. With respect to claim 31, OTHA discloses a substrate carrier having an openable portion, an opening mechanism, a transfer location, a support, an actuator and employing movement of the carrier to open and close the carrier.
- 2.16. With respect to claim 32, OTHA additionally teaches a port.
- 2.17. With respect to claim 39, OTHA additionally discloses a cam follower arrangement.
- 2.18. With respect to claim 41, OHTA additionally discloses the opening mechanism pivoting a door.
- 2.19. With respect to claim 42, OHTA additionally discloses the actuator interfacing with the opening mechanism to pivot the door downwardly (upon retraction from actuator).
- 2.20. With respect to claim 44, OHTA additionally discloses movement of the carrier employed to unlatch an openable portion of the carrier.
- 2.21. With respect to claim 45 and 46, OHTA additionally discloses employing movement of the carrier to unclamp the substrate.
- 2.22. With respect to claim 49, OHTO additionally teaches the movement is toward a processing tool (Col. 3 Li. 55-58).
- 2.23. With respect to claim 50, OTHA additionally teaches a port.
3. Claim(s) 64 is/are rejected under 35 U.S.C. 102(b) as being anticipated by ACKERET (US 4,694,957)
- 3.1. With respect to claim 64, ACKERET teaches moving a substrate carrier, and translating the motion of the carrier into respective forces for opening two doors (Fig. 4; Col. 4).



**VI. Claim Rejections - 35 USC § 103**

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claim(s) 5-6 is/are rejected under 35 U.S.C. 103(a) as being unpatentable over DOCHE '806 (US 6,431,806) in view of DOCHE '205 (US 5,549,205).

1.1. With respect to claim 5, DOCHE '806 fails to teach the storage shelf vertically above the transfer location. DOCHE '205 teaches a storage shelf (30) vertically above the transfer location. It would have been obvious to one of ordinary skill in the art to modify DOCHE '806 with the storage location of DOCHE '205 in order to provide a buffer zone between an overhead conveyor and a processing tool.

1.2. With respect to claim 6, DOCHE '806 fails to teach a tunnel for directing laminar air flow. DOCHE '205 teaches a tunnel (5) for directing laminar air flow. It would have been obvious to one of ordinary skill in the art to modify DOCHE '806 with the laminar air flow tunnel of DOCHE '205 in order to inhibit particulate from settling on the substrate.

2. Claim(s) 8 and 9 is/are rejected under 35 U.S.C. 103(a) as being unpatentable over DOCHE '806 (US 6,431,806) in view of CARMAN (US 2,757,440).

2.1. With respect to claim 8, DOCHE '806 fails to teach a cam follower arrangement. CARMAN teaches a cam follower. It would have been obvious to one of ordinary

skill in the art to modify DOCHE '806 with the cam follower of CARMAN in order to translate the docking motion into an opening motion.

2.2. With respect to claim 9, DOCHE '806 fails to teach a magnetic cam follower.

CARMAN teaches a magnetic cam follower. It would have been obvious to one of ordinary skill in the art to modify DOCHE '806 with the magnetic cam follower of CARMAN in order to bias the follower toward the cam.

3. Claim(s) 10 and 12 is/are rejected under 35 U.S.C. 103(a) as being unpatentable over DOCHE '806 in view of IDE (US 6,316,748).

3.1. With respect to claim 10, DOCHE '806 fails to teach pivoting a door. IDE teaches pivoting a door. It would have been obvious to one of ordinary skill in the art to modify DOCHE '806 with the pivoting door of IDE in order to facilitate opening and closing of the door.

3.2. With respect to claim 12, DOCHE '806 fails to teach the actuator pivoting a pair of doors in opposite directions. IDE teaches a pair of doors pivoting in opposite directions. It would have been obvious to one of ordinary skill in the art to modify DOCHE with the pair of pivoting doors of IDE in order to reduce the amount of time and space needed to actuate the doors.

4. Claim(s) 16 is/are rejected under 35 U.S.C. 103(a) as being unpatentable over DOCHE '806 in view of CHIANG (US 6,137,669)

4.1. With respect to claim 16, DOCHE '806 fails to teach a sensor indicative of laminar air flow. CHIANG teaches a sensor indicative of laminar air flow. It would have been obvious to one of ordinary skill in the art to modify DOCHE '806 with the sensor of

CHIANG in order to ensure the presence of laminar air flow past the carrier, thereby inhibiting contamination of the substrate.

5. Claim(s) 33 is/are rejected under 35 U.S.C. 103(a) as being unpatentable over OTHA in view of DOCHE '806.

5.1. With respect to claim 33, OTHA fails to teach a docking platform and the employment of a docking movement to actuate opening of the substrate. DOCHE '806 teaches a docking platform and the employment of a docking movement to actuate opening of the substrate. It would have been obvious to one of ordinary skill in the art to modify OTHA with the docking platform of DOCHE '806 in order to provide a dedicated area for the carrier to interface with the transfer location. It would have been obvious to one of ordinary skill in the art to modify OTHA with the employment of a docking movement to actuate opening of the substrate of DOCHE '806 in order to employ a single movement to both translate the carrier toward a processing tool and to open the carrier, thereby saving time and energy.

6. Claim(s) 24-25, and 43 is/are rejected under 35 U.S.C. 103(a) as being unpatentable over OTHA in view of ACKERET (US 4,694,957).

6.1. With respect to claim 24, OTHA fails to teach pivoting the door downwardly to open the carrier. ACKERET teaches pivoting the door downwardly to open the carrier (32). It would have been obvious to one of ordinary skill in the art to modify OTHA with the downwardly pivoting door of ACKERET in order to minimize the chances of particulate coming to rest on the substrate.

- 6.2. With respect to claim 25, OTHA fails to teach a pair of doors pivoted in opposite directions to open the carrier. ACKERET teaches a pair of doors pivoted in opposite directions to open the carrier. It would have been obvious to one of ordinary skill in the art to modify OTHA with the pair of doors pivoted in opposite directions of ACKERT to minimize the amount of time and space needed to actuate the doors.
- 6.3. With respect to claim 43, OTHA fails to teach a pair of doors pivoted in opposite directions to open the carrier. ACKERET teaches a pair of doors pivoted in opposite directions to open the carrier. It would have been obvious to one of ordinary skill in the art to modify OTHA with the pair of doors pivoted in opposite directions of ACKERT to minimize the amount of time and space needed to actuate the doors.
7. Claim(s) 34 is/are rejected under 35 U.S.C. 103(a) as being unpatentable over OTHA in view of KROEKER (US 6,719,516).
- 7.1. With respect to claim 34, OTHA fails to teach a load lock. KROEKER teaches a load lock. It would have been obvious to one of ordinary skill in the art to modify OTHA with the load lock of KROEKER in order to maintain a vacuum environment, for a substrate that would benefit from such an environment, during transfer.
8. Claim(s) 35 is/are rejected under 35 U.S.C. 103(a) as being unpatentable over OTHA in view of DOCHE '806 and further in view of KROEKER.
- 8.1. With respect to claim 35, OTHA fails to teach a docking platform and the employment of a docking movement to actuate opening of the substrate. DOCHE '806 teaches a docking platform and the employment of a docking movement to actuate opening of the substrate. OTHA fails to teach a load lock. KROEKER teaches

a load lock. It would have been obvious to one of ordinary skill in the art to modify OTHA with the docking platform of DOCHE '806 in order to provide a dedicated area for the carrier to interface with the transfer location. It would have been obvious to one of ordinary skill in the art to modify OTHA with the employment of a docking movement to actuate opening of the substrate of DOCHE '806 in order to employ a single movement to both dock and open the carrier, thereby saving time and energy. It would have been obvious to one of ordinary skill in the art to modify OTHA in view of DOCHE '806 with the load lock of KROEKER in order to maintain a vacuum environment, for a substrate that would benefit from such an environment, during transfer.

9. Claim(s) 36-38 is/are rejected under 35 U.S.C. 103(a) as being unpatentable over OTHA in view of DOCHE '205.

9.1. With respect to claim 36 and 37, OTHA fails to teach a storage shelf. DOCHE '205 teaches a storage shelf vertically above the transfer location. It would have been obvious to one of ordinary skill in the art to modify OTHA with the storage location of DOCHE '205 in order to provide a buffer zone between an overhead conveyor and a processing tool.

9.2. With respect to claim 38, OTHA fails to teach a tunnel for directing laminar air flow. DOCHE '205 teaches a tunnel for directing laminar air flow. It would have been obvious to one of ordinary skill in the art to modify DOCHE '806 with the laminar air flow tunnel of DOCHE '205 in order to inhibit particulate from settling on the substrate.

Art Unit: 3652

10. Claim(s) 40 is/are rejected under 35 U.S.C. 103(a) as being unpatentable over OTHA in view of CARMAN.

10.1. With respect to claim 40, OTHA fails to teach a magnetic cam follower. CARMAN teaches a magnetic cam follower. It would have been obvious to one of ordinary skill in the art to modify OTHA with the magnetic cam follower of CARMAN in order to bias the follower toward the cam.

11. Claim(s) 47 is/are rejected under 35 U.S.C. 103(a) as being unpatentable over OTHA in view of DOCHE '806 and further in view of CHIANG.

11.1. With respect to claim 47, OTHA fails to teach a docking platform and the employment of a docking movement to actuate opening of the substrate. DOCHE '806 teaches a docking platform and the employment of a docking movement to actuate opening of the substrate. OTHA fails to teach a sensor indicative of laminar air flow. CHIANG teaches a sensor indicative of laminar air flow. It would have been obvious to one of ordinary skill in the art to modify OTHA with the docking platform of DOCHE '806 in order to provide a dedicated area for the carrier to interface with the transfer location. It would have been obvious to one of ordinary skill in the art to modify OTHA with the employment of a docking movement to actuate opening of the substrate of DOCHE '806 in order to employ a single movement to both dock and open the carrier, thereby saving time and energy. It would have been obvious to one of ordinary skill in the art to modify OTHA in view of DOCHE '806 with the sensor of CHIANG in order to ensure the presence of laminar air flow past the carrier, thereby inhibiting contamination of the substrate.

12. Claim(s) 51-55, 57-59 and 61 is/are rejected under 35 U.S.C. 103(a) as being unpatentable over DOCHE '806 in view of OTHA.

12.1. With respect to claim 51, DOCHE '806 teaches a port, and a mechanism to move a substrate carrier toward the port. DOCHE '806 fails to teach translating motion of the substrate carrier toward the port into a force for opening a door of the substrate carrier. OTHA teaches translating motion of the substrate carrier toward the port into a force for opening a door of the substrate carrier. It would have been obvious to one of ordinary skill in the art to modify DOCHE '806 by translating motion of the substrate carrier toward the port into a force for opening a door of the substrate carrier, as in OTHA, in order to employ a single movement to both translate the carrier toward a processing tool and to open the carrier, thereby saving time and energy.

12.2. With respect to claim 52, DOCHE '806 additionally teaches a docking platform.

12.3. With respect to claim 53, DOCHE '806 fails to teach a cam mounted adjacent a port and a cam follower coupled to a door. OTHA teaches cam mounted adjacent a port and a cam follower coupled to a door. It would have been obvious to one of ordinary skill in the art to modify DOCHE '806 with the cam and follower of OTHA in order to employ a single movement to both translate the carrier toward a processing tool and to open the carrier, thereby saving time and energy.

12.4. With respect to claim 54, DOCHE '806 fails to teach a force for pivoting the door on a hinge mounted to the substrate carrier. OTHA teaches a force for pivoting the door on a hinge mounted to the substrate carrier. It would have been obvious to one

of ordinary skill in the art to modify DOCHE '806 with the hinge mounted door and pivoting force of OTHA in order to facilitate actuation of the door.

12.5. With respect to claim 55, DOCHE '806 additionally teaches the port through in a clean room (7) wall.

12.6. With respect to claim 57, DOCHE '806 teaches moving a substrate carrier toward a port. DOCHE '806 fails to teach translating motion of the carrier toward the port into a force for opening a door. OTHA teaches translating motion of the substrate carrier toward the port into a force for opening a door of the substrate carrier. It would have been obvious to one of ordinary skill in the art to modify DOCHE '806 by translating motion of the substrate carrier toward the port into a force for opening a door of the substrate carrier, as in OTHA, in order to employ a single movement to both translate the carrier toward a processing tool and to open the carrier, thereby saving time and energy.

12.7. With respect to claim 58, DOCHE '806 additionally teaches a docking platform and moving the docking platform toward a port.

12.8. With respect to claim 59, DOCHE '806 fails to teach a cam follower coupled to a door contacting a cam mounted adjacent a port. OTHA teaches a cam follower coupled to a door contacting a cam mounted adjacent a port. It would have been obvious to one of ordinary skill in the art to modify DOCHE '806 with the cam and follower arrangement of OTHA in order to employ a single movement to both translate the carrier toward a processing tool and to open the carrier, thereby saving time and energy.



12.9. With respect to claim 61, DOCHE '806 fails to teach pivoting the door on a hinge mounted on the carrier. OTHA teaches pivoting the door on a hinge mounted on the carrier. It would have been obvious to one of ordinary skill in the art to modify DOCHE '806 with the hinge of OTHA to facilitate actuation of the door.

13. Claim(s) 56 is/are rejected under 35 U.S.C. 103(a) as being unpatentable over DOCHE '806 in view of OTHA and further in view of KROEKER.

13.1. With respect to claim 56, DOCHE '806 fails to teach the port of a load lock chamber. KROEKER teaches the port of a load lock chamber. It would have been obvious to one of ordinary skill in the art to modify DOCHE '806 in view of OTHA with the load lock of KROEKER in order to maintain a vacuum environment, for a substrate that would benefit from such an environment, during transfer.

14. Claim(s) 60 is/are rejected under 35 U.S.C. 103(a) as being unpatentable over DOCHE '806 in view of OTHA and further in view of GRAHAM (US 3,794,366).

14.1. With respect to claim 60, DOCHE '806 fails to teach exposing a magnet coupled to the door to a magnetic field generated by a magnet mounted adjacent a port. GRAHAM teaches exposing a magnet ((32); (Col. 2 Li. 66)) coupled to a door (15) exposed to a magnetic field generated by a magnet ((21) (Col.2 Li. 29-31)) adjacent a port (19). It would have been obvious to one of ordinary skill in the art to modify DOCHE '806 in view of OTHA with the magnets of GRAHAM in order to bias the door in a desired direction. *Note: Prior art fails to teach the force for opening the door generated by the magnetic arrangement. This limitation however, is not necessarily required by applicant's claim language.*

15. Claim(s) 62 is/are rejected under 35 U.S.C. 103(a) as being unpatentable over DOCHE '806 in view of OTHA and further in view of ACKERET.

15.1. With respect to claim 62, DOCHE '806 fails to teach opening including pivoting the door downwardly. ACKERET teaches opening including pivoting the door downwardly. It would have been obvious to one of ordinary skill in the art to modify DOCHE '806 in view of OTHA with the downwardly pivoting door of ACKERET in order to minimize the chances of particulate coming to rest on the substrate.

16. Claim(s) 57 and 63 is/are rejected under 35 U.S.C. 103(a) as being unpatentable over DOCHE '806 in view of ACKERET.

16.1. With respect to claim 57, DOCHE '806 teaches moving a substrate carrier toward a port. DOCHE '806 fails to teach translating motion of the carrier toward the port into a force for opening a door. ACKERET teaches translating motion of the substrate carrier toward the port into a force for opening a door of the substrate carrier. It would have been obvious to one of ordinary skill in the art to modify DOCHE '806 by translating motion of the substrate carrier toward the port into a force for opening a door of the substrate carrier, as in ACKERET, in order to employ a single movement to both translate the carrier toward a processing tool and to open the carrier, thereby saving time and energy.

16.2. With respect to claim 63, DOCHE '806 fails to teach translating the motion of the carrier into respective forces for opening two doors of the carrier. ACKERET teaches translating the motion of the carrier into respective forces for opening two doors of the carrier (Col. 4 Li. 44 et seq.). It would have been obvious to one of ordinary skill

in the art to modify DOCHE '806 with the translating means of ACKERET in order to employ a single movement to both translate the carrier toward a processing tool and to open the carrier, thereby saving time and energy.

17. Claim(s) 65 is/are rejected under 35 U.S.C. 103(a) as being unpatentable over ACKERET in view of OTHA.

17.1. With respect to claim 65, ACKERET fails to teach the a cam and follower arrangement coupled to the doors. OTHA teaches a cam and follower arrangement coupled to a door. It would have been obvious to one of ordinary skill in the art to modify ACKERET with the cam and follower arrangement of OTHA to ensure that, during actuation, the doors follow a pre-defined path, thereby reducing the chances of accidental interference with other parts.

18. Claim(s) 66 is/are rejected under 35 U.S.C. 103(a) as being unpatentable over ACKERET in view of OTHA and further in view of GRAHAM.

18.1. With respect to claim 66, ACKERET fails to teach exposing to a magnetic field, magnets coupled to the doors. GRAHAM teaches exposing to a magnetic field, magnets coupled to the doors (all magnets are, by definition, exposed to a magnetic field). It would have been obvious to one of ordinary skill in the art to modify ACKERET in view of OTHA with the magnets coupled to the doors of GRAHAM in order to bias the doors in the desired orientation.

## **VII. Allowable Subject Matter**

1. Claims 17 and 48 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

1.1. With respect to claim 17 and 48, the following is a statement of reasons for the indication of allowable subject matter:

1.1(a) Neither DOCHE '806 in view of CHIANG nor OTHA in view of DOCHE '806 and further in view of CHIANG teach an apparatus for opening a substrate carrier that includes a controller coupled to a sensor and a docking platform, wherein the sensor is adapted to sense a condition indicative of air flow directed so as to flow laminarly past a substrate carrier positioned on the platform, the controller adapted to move the docking platform so as to close a substrate carrier supported thereon if the sensor detects loss of the laminar air flow. Coupling the sensor to a controller causing closing of the carrier if there is a loss of laminar air flow patentably distinguishes applicants claimed invention over the cited references. This unique feature, in combination with the rest of the claim language, is not taught or fairly suggested by prior art.


#### **VIII. Conclusion**

1. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.
2. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charles N. Greenhut whose telephone number is (571) 272-1517. The examiner can normally be reached on 7:30am - 4:00pm EST.

Art Unit: 3652

3. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eileen D. Lillis can be reached on (571) 272-6928. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.
4. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

CG



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